

## PATENT SPECIFICATION

745,965



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## COMPLETE SPECIFICATION

## Improvements in or relating to Aircraft Undercarriage Fairings

We, BLACKBURN AND GENERAL AIRCRAFT LIMITED, a British Company, of Brough, East Yorkshire, and WILLIAM HENRY THIRSK, a British Subject, of 34 Railway Street, Beverley, East Yorkshire, do hereby declare the invention, for which we pray that a patent may be granted to us, and the method by which it is to be performed, to be particularly described in and by the following statement:—

10 This invention relates to aircraft undercarriage fairings, designed to reduce the drag created by parts projecting into the air-stream of fixed landing gear, and it has for its object to provide a fairing for the projecting shock absorbing landing-gear-carrying parts which by reason of their movement cannot be accommodated in a fixed landing-leg fairing.

15 To this end according to the present invention, a fairing forming part is carried for displacement by anti-rotational linkage on the shock absorber such that when the shock absorber is fully extended the fairing part is positioned as a continuation of the forward portion of a fixed landing-leg fairing and on compression of the shock absorber is angularly displaced by such linkage, without impeding the action of the shock absorber.

20 Now in order that the invention may be clearly understood and readily carried into effect, an embodiment thereof as applied to a bogie landing gear is hereinafter more fully described with reference to the accompanying drawings, which are given for purposes of illustration only and not of limitation, as the invention is equally applicable to landing gear which a single wheel is carried by the shock absorber.

25 In these drawings:—

Figure 1 is a side elevation with the fairing in its operative position and the shock absorber fully extended as during flight;

30 Figure 2 is a view similar to Figure 1 in normal position as when the aircraft is on the ground, the position of maximum displacement of the fairing being indicated in broken lines in Figure 1; and

35 Figure 3 is a front elevation looking on the left hand side of Figure 1.

Referring now to the said drawings, the

shock absorber landing leg 1 is carried within a fixed fairing 2 with the moveable portion 3 of such shock absorber projecting beyond the end of such fixed fairing.

40 Pairs of links 4, 5 and 6, 7, extend in the normal way between the fixed and movable portions of the shock absorber 1 to prevent the rotation of the movable portion, which carries at its end a landing wheel or, as in the embodiment illustrated, a bogie 8 carrying wheels or pairs of wheels 9, 10.

Now according to the present invention a fairing part 11 which matches the contour of the leading portion of the fixed fairing 2 is pivoted at 12 co-incident with the pivoting of the link 5 to the movable portion 3 of the shock absorber. The fairing part 11 is furthermore connected at 13 on the axis of the junction of the links 4, 5.

45 The end 14 of the fairing part 11 is sloped to match the sloping end edge of the forward part of the fairing 2 and the arrangement is such that when the movable part 3 of the shock absorber is fully extended as during flight, the fairing part 11 occupies its operative position forming an extension of the forward part of the fixed fairing 2 as illustrated in Figures 1 and 3.

50 On compression of the shock absorber the angular displacement of the links 4, 5 rocks the fairing part about the axis 12 so that it swings clear of the fixed fairing 2 and thereby does not interfere with the free movement of the shock absorber. When standing on the ground, the position of the parts is as shown in Figure 2 whilst on maximum compression of the shock absorber as during landing, the fairing part 11 is moved to the position shown in broken lines in Figure 1.

55 In some cases a complementary trailing fairing part may be provided for movement by the links 6, 7.

What we claim is:—

60 1. An undercarriage landing leg for aircraft in which a fairing forming part is carried for displacement by anti-rotational linkage on the shock absorber such that when the shock absorber is fully extended the fairing part is positioned as a continuation of the forward

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portion of a fixed landing-leg fairing and on compression of the shock absorber is angularly displaced by such linkage.

2. An undercarriage landing leg provided with a displaceable fairing part substantially as hereinbefore described with reference to the accompanying drawings.

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By a direction given under Section 17 (1) of the Patents Act 1949 this appl  
proceeded in the name of Blackburn and General Aircraft Limited, a British compa  
Brough, East Yorkshire.

THE PATENT OFFICE,  
*3rd February, 1956*

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745,965 COMPLETE SPECIFICATION  
1 SHEET This drawing is a reproduction of  
the Original on a reduced scale.

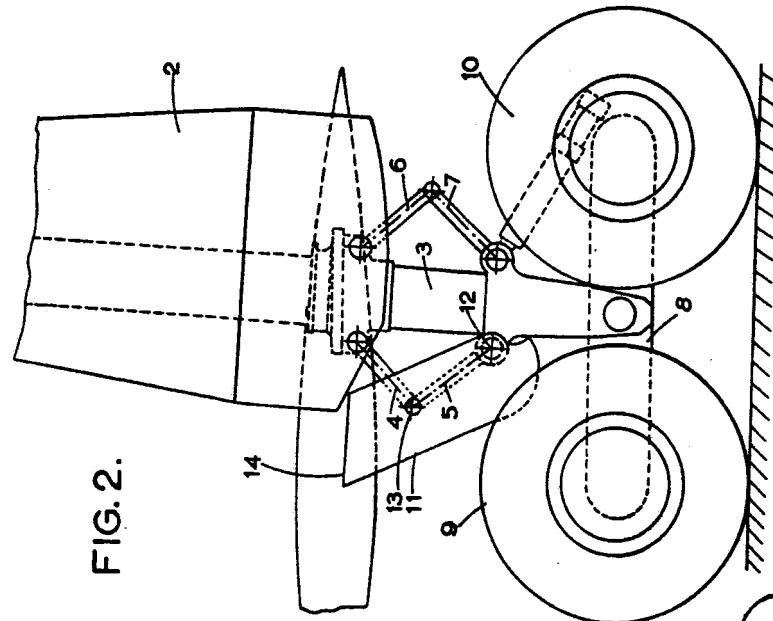


FIG. 2.

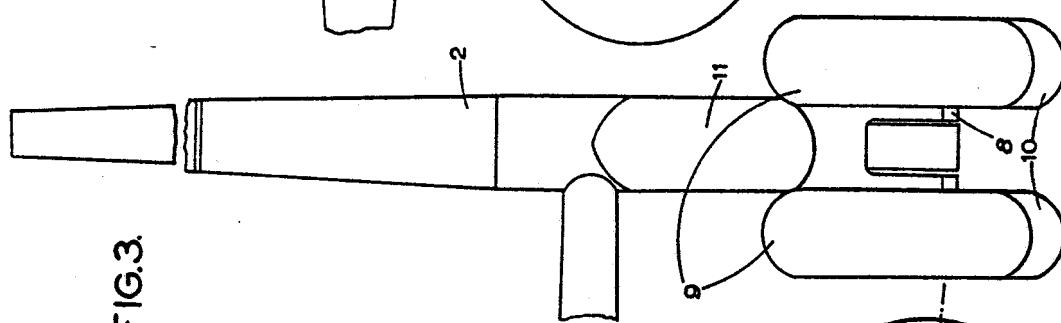


FIG. 3.

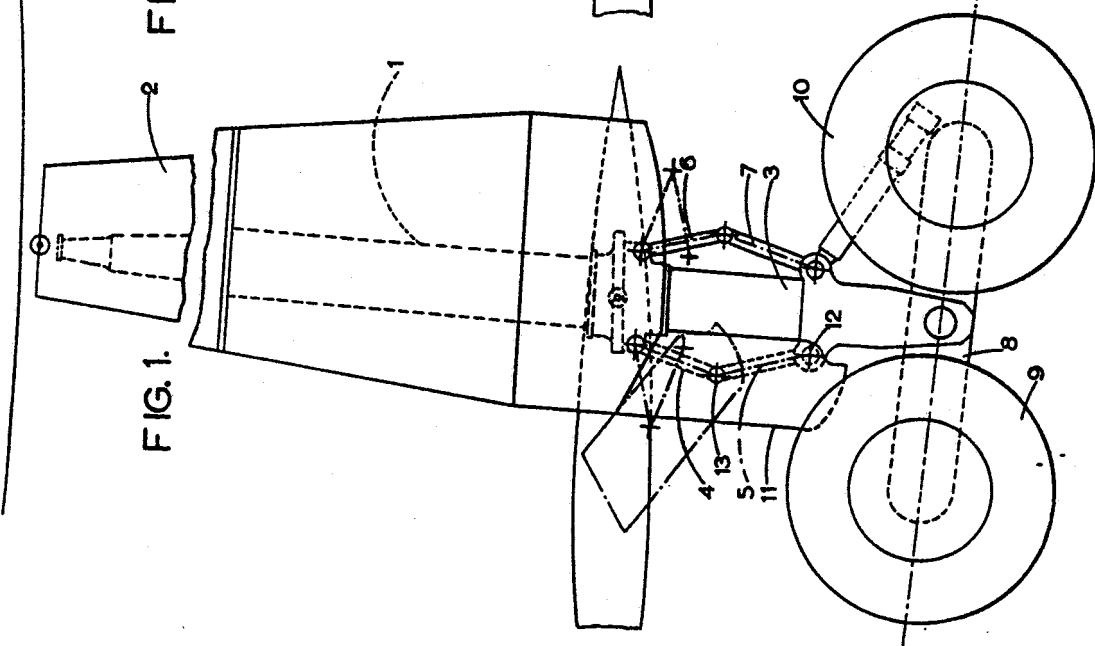


FIG. 1.